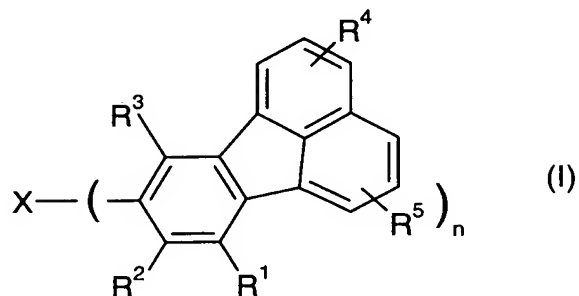


Claims

1. A fluoranthene derivative of the general formula I

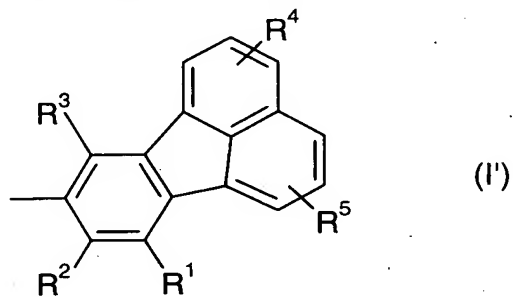


where the symbols have the following meanings:

R^1, R^2, R^3, R^4, R^5 are each hydrogen, alkyl, an aromatic radical, a fused aromatic ring system, a heteroaromatic radical or $-CH=CH_2$, (E)- or (Z)- $CH=CH-C_6H_5$, acryloyl, methacryloyl, methylstyryl, $-O-CH=CH_2$ or glycidyl;

where at least one of the radicals R^1, R^2 and/or R^3 is not hydrogen;

X is an alkyl radical, an aromatic radical, a fused aromatic ring system, a heteroaromatic radical or a radical of the formula (I')



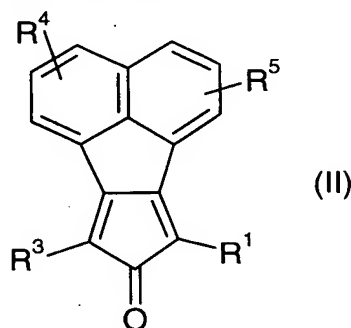
or an oligophenyl group;

n is from 1 to 10 or, in the case of X = oligophenyl group, 1-20;

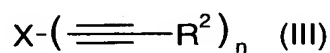
with the proviso that R^1, R^2, R^3 and X are not at the same time phenyl when R^4 and R^5 are hydrogen.

2. A fluoranthene derivative according to claim 1, wherein R^4 and R^5 are each hydrogen.

3. A fluoranthene derivative according to claim 1 or 2, wherein R^1 and R^3 are each a phenyl radical.
4. A fluoranthene derivative according to any of claims 1 to 3, wherein X is an aromatic radical, a fused aromatic ring system or a radical of the formula I' or an oligophenyl group.
5. A fluoranthene derivative according to claim 4, wherein n is 2 or 3 or, when X is an oligophenyl group, from 1 to 20.
6. A process for preparing fluoranthene derivatives according to any of claims 1 to 5 by reaction of a compound of the formula II



with an alkynyl compound of the formula (III)



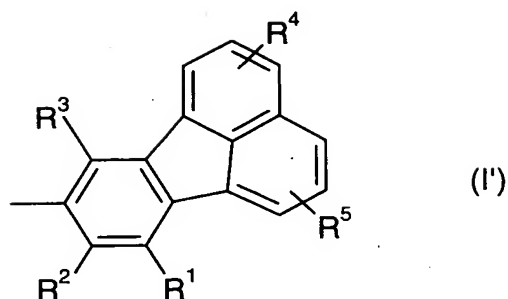
and subsequent elimination of carbon monoxide,

where the symbols have the following meanings:

R^1, R^2, R^3, R^4, R^5 are each hydrogen, alkyl, an aromatic radical, a fused aromatic ring system, a heteroaromatic radical or $-\text{CH}=\text{CH}_2$, (E)- or (Z)- $\text{CH}=\text{CH}-\text{C}_6\text{H}_5$, acryloyl, methacryloyl, methylstyryl, $-\text{O}-\text{CH}=\text{CH}_2$ or glycidyl;

where at least one of the radicals R^1, R^2 and/or R^3 is not hydrogen;

X is an alkyl radical, an aromatic radical, a fused aromatic ring system, a heteroaromatic radical or a radical of the formula (I')

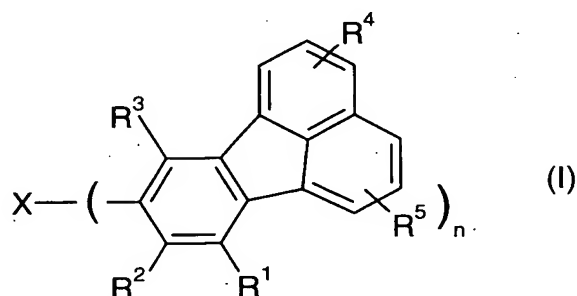


or an oligophenyl group;

n is from 1 to 10 or, in the case of X = oligophenyl group, from 1 to 20.

7. A process according to claim 6, wherein the compound of the formula (II) is acecyclone.

10 8. The use of fluoranthene derivatives of the general formula (I)

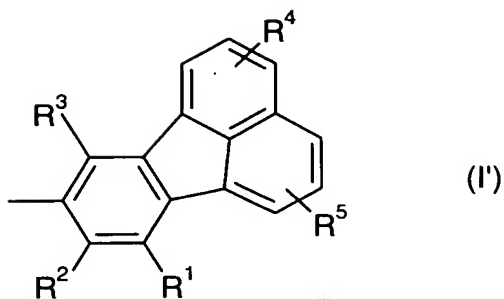


where the symbols have the following meanings:

R^1, R^2, R^3, R^4, R^5 are each hydrogen, alkyl, an aromatic radical, a fused aromatic ring system, a heteroaromatic radical or $-\text{CH}=\text{CH}_2$, (E)- or (Z)- $\text{CH}=\text{CH}-\text{C}_6\text{H}_5$, acryloyl, methacryloyl, methylstyryl, $-\text{O}-\text{CH}=\text{CH}_2$ or glycidyl;

where at least one of the radicals R^1, R^2 and/or R^3 is not hydrogen;

X is an alkyl radical, an aromatic radical, a fused aromatic ring system, a heteroaromatic radical or a radical of the formula (I')



or an oligophenyl group;

n is from 1 to 10 or, in the case of X = oligophenyl group, from 1 to 20;

or of fluoranthene derivatives according to any of claims 1 to 5 as emitter molecule in organic light-emitting diodes (OLEDs).

9. A light-emitting layer comprising one or more fluoranthene derivatives of the general formula (I) according to any of claims 1 to 5 or as set forth in claim 8 as emitter molecules.
10. An OLED comprising a light-emitting layer according to claim 9.
11. A device selected from the group consisting of stationary VDUs such as VDUs of computers, televisions, VDUs in printers, kitchen appliances and advertising signs, lighting, information signs and mobile VDUs such as VDUs in mobile telephones, laptops, vehicles and destination displays on buses and trains comprising an OLED according to claim 10.